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Maintaining acute stroke care during the covid-19 pandemic: The Tuscany stroke network performance in 2020

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Background and aims

The COVID 19 pandemic is impacting on acute ischemic stroke (AIS) care: fewer patients reach the hospital within the therapeutic time-window. We aim at describing and quantifying this impact in terms of number of stroke hospital admissions and treatments across the Tuscany Stroke Network (TSN) in 2020.

Methods

The TSN was implemented in 2015 and it is structured as three hub-and-spoke systems throughout Tuscany. We retrospectively included all AIS patients admitted and those treated in each of the 22 TSN hospitals during 2020, using the 2019 as a comparator.

Results

From January 1 through December 312,020, a total of 1388 treatments were administered to AIS patients, being 1536 during the same period of 2019. Compared with 2019, AIS hospital admissions in 2020 decreased by 11.7% while reperfusion treatments only by 9.5%. In particular, thrombolysis decreased by 10% but endovascular tratments increased by 11.7%. Single month as well as single hospital performances varied a lot.

Conclusions

During 2020, secondary to stay-at-home orders and possibly patients wanting to avoid healthcare facilities, stroke volumes decreased significantly across Tuscany. In addition, many patients reached hospitals beyond thrombolysis therapeutic window and were transferred to the hub for endovascular treatment. The logistic interventions provided by the TSN counterbalanced the deleterious effects of the COVID 19 outbreak on AIS care. Our data suggest both the need and the benefit of organized stroke systems. Only a well-established hospital network can adjust its organization and logistics to quickly and effectively deal with an unexpected health problem.

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Covid-19-associated Guillain-Barré syndrome in the first wave of COVID-19 pandemic in Lombardia: Increased incidence or increased seroprevalence?

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Background and aims

Several studies reported increased incidence of Guillain-Barre' Syndrome (GBS) after Zika epidemic, SARS-CoV and MERS, and more recently SARS-CoV-2 infection. We estimate incidence and describe clinical characteristics and outcome of GBS in COVID-19 patients in one of the most affected regions by COVID-19 of the world, Lombardia.

Methods

A multi-center observational study on neurological complications in COVID-19 patients was conducted in 20 Neurology Departments by the Italian society of Hospital Neuroscience (SNO). Adult patients admitted to Neurological units between February-April 2020 with COVID19-GBS were included.

Results

38 COVID19-GBS patients had mean age of 60.7 years and male frequency of 86.8%. Mean interval between COVID-19 onset and GBS onset was 15.1 days. CSF albuminocytologic dissociation was detected in 71.4% of cases, PCR for SARS-CoV-2 negative in all 15 tested patients, and anti-ganglioside antibodies positive in 43.7%. Based on neurophysiology, 81.8% of patients had a diagnosis of AIDP diagnosis, 12.1% AMSAN and 6% AMAN. 29 patients have been treated with intravenous Immunoglobulin (IVIg), 2 with plasma exchange (PE), 2 with PE followed by IVIg and 5 untreated. The course was favorable in 76.3% of patients, stable in 10.5%, while 13.1% worsened, of which 3 died. The estimated occurrence rate in Lombardia is 0.5 GBS cases per 1000 COVID-19 infections.

Conclusions

We detected an increased incidence of GBS in COVID-19 patients which can reflect a higher risk of GBS in COVID-19 patients or be secondary to a higher seroprevalence of COVID-19 in this geographic area during the first pandemic wave.

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Preliminary evidence of blunted humoral response to SARS-Cov-2 (MRNA) vaccine in multiple sclerosis patients treated with ocrelizumab

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Background and aims

Since the worldwide launch of the SARS-CoV-2 vaccine campaign, several concerns apply on the response to vaccines in people with multiple sclerosis (pwMS) particularly those on high efficacy disease modifying therapies (DMTs). We report preliminary data on humoral response to Covid-19 vaccine assessed on four pwMS treated with ocrelizumab (OCR) and compared to that measured in a sample of healthy subjects (HS) enrolled in a surveillance programme at our Clinic.

Methods

We collected serum samples -at 0,14,21 days after the first dose and 7 days after the second dose of NT162b2-mRNA-Covid-19 vaccine of: i) 55 health-care workers, and ii) four relapsing MS patients on OCR, that were vaccinated with the same Covid-19 vaccine. All subjects did not have a history of Covid-19 infection. Sera were tested using the LIAISON®SARS-CoV-2 TrimericS-IgG assay (DiaSorin-S.p.A.), for the detection of IgG antibodies to SARS-CoV-2 spike protein. The IgG-titers were expressed in Binding Antibody Units (BAU).

Results

Seven days after the second dose of NT162b2-mRNA-Covid-19 vaccine, all HS mounted a significant humoral response (geometric mean 2010.4 BAU/mL C.I.95%1512.7–2672), while all the four pwMS showed a very low response (range 4,9–175 BAU/mL).

Conclusions

As expected and in agreement with previous data, we found a blunted humoral response to NT162b2-mRNA-vaccine in pwMS treated with OCR. Further data are urgently needed in order to confirm and expand these preliminary, yet significant results and to inform if there is any strategy to optimize the response to vaccines such as the count of circulating CD20 cells, time-elapsed since the last anti-CD20 drug administration.

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Amyotrophic lateral sclerosis progression in the year of the COVID-19 pandemic

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Background and aims

During the COVID-19 pandemic and the related lockdowns, the outpatient follow-up visits for patients with chronic neurological diseases have been suspended. In this context, the management of people affected by Amyotrophic Lateral Sclerosis (ALS) has become highly complicated, leaving patients without the standard multidisciplinary follow-up. We aimed to analyze the impact of the COVID-19 lockdown (CL) on ALS disease progression with this study.

Methods

We compared the clinical data and progression in the first year of disease for a group of patients who received ALS diagnosis during 2020 (2020G, $N = 34$), comparing it with a group of ALS patients diagnosed in 2018 (2018G, $N = 31$). Both groups received a comparable multidisciplinary model of care in our Tertiary Expert ALS Centre in Novara.

Results

The monthly rate of ALSFRS-R decline during CL was significantly increased in 2020G compared to 2018G (1.52 ± 2.69 vs. 0.76 ± 0.56; *p*-value: 0.005). In 2020G 47% required Non-Invasive Ventilation (vs. 32% of 2018G) and 32% of patients died (median months from onset to death: 18) vs. 19% of patients in 2018G (median months from diagnosis to death: 35). All results were independently by gender, age, site of onset, and diagnostic delay. Concomitantly, in 2020G, we observed higher level of depression and anxiety (HADS scale).

Conclusions

Several factors can be implicated in making ALS more severe, with a faster progression. Significant predictors include a reduced medical evaluations and therapeutic changes, social isolation, an increase of anxiety and depression, and rehabilitation therapy suspension.